

Update on SVMG Survey: PQ, Reliability, and Digital Loads

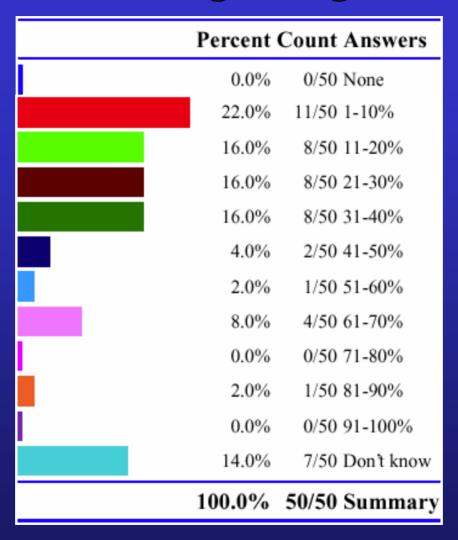
- Preliminary Results -

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Survey of SVMG Membership

- Survey Respondents
 - 50 overall
 - 80% of these are high-tech, computer, related manufacturing, and data processing enterprises
 - The remainder including mining, professional services, and hospitals
- Objective: To assess the role of new "digital loads" in PQ and Reliability issues
- Our thanks to SVMG, Justin Bradley, and his team for their support and expertise
- Our special thanks to the U.S. Department of Energy and the California Energy Commission for their financial support of this important work

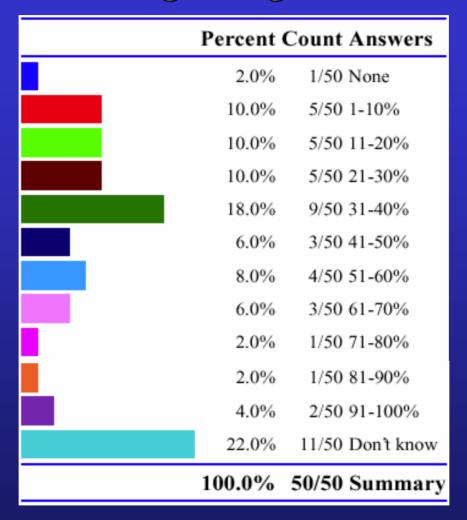
Percent of Power Going to Digital Loads Today?







Percent of Power Going to Digital Loads In 10 Years?



Weighted average: 29.2% of respondent loads will be "digital" in 10 years, an increase of 25%.



Priority Given By Management to PQ and Reliability Issues

Percent Count Answers			
2.0%	1/50 1 Low priority compared to other business issues		
4.0%	2/50 2		
6.0%	3/50 3		
0.0%	0/50 4		
28.0%	14/50 5 About the same priority as typical day-to-day business		
6.0%	3/50 6		
12.0%	6/50 7		
12.0%	6/50 8		
6.0%	3/50 9		
24.0%	12/50 10 Receives highest priority compared to other business issues		
100.0%	50/50 Summary		
67.8%	6.8/10 Overall rating from 1 to 10		



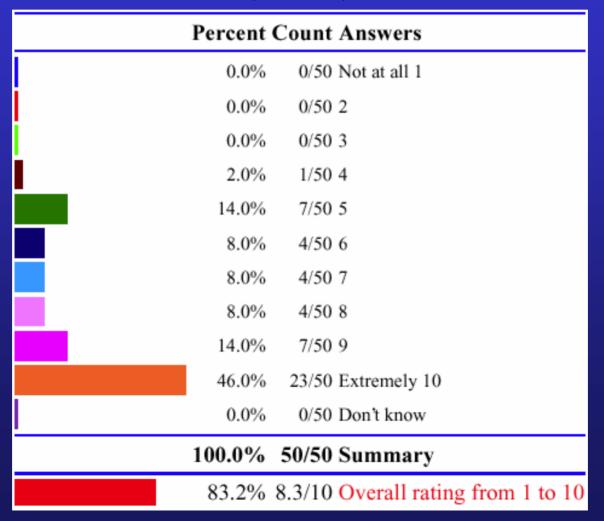
Money Invested in Improving PQ and Reliability

Percent Count Answers			
14.0%	7/50 1 Low priority compared to other business issues		
4.0%	2/50 2		
6.0%	3/50 3		
4.0%	2/50 4		
14.0%	7/50 5 About the same priority as typical day-to-day business		
4.0%	2/50 6		
4.0%	2/50 7		
16.0%	8/50 8		
10.0%	5/50 9		
24.0%	12/50 10 Receives highest priority compared to other business issues		
100.0%	50/50 Summary		
63.6%	6.4/10 Overall rating from 1 to 10		



How Injurious are Power Interruptions to Your Business?

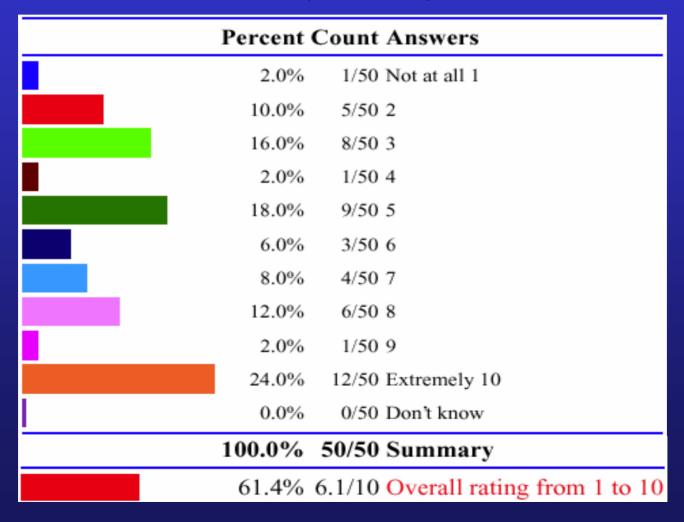
(> 1 hour)





How Injurious are Momentary Interruptions to Your Business?

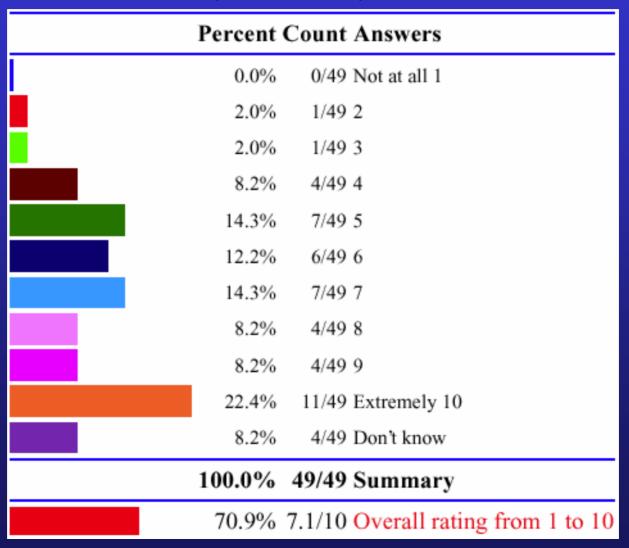
(1-2 seconds)





How Injurious is Long-term Voltage Reduction to Your Business?

(7% reduction)





What Sorts of PQ Mitigation Equipment Are Currently In Use?

Percent Count Answers			
	82.0%	41/50 Small battery-based uninterruptible power supplies (UPS, < 100	
	20.0%	10/50 Power factor correction capacitors	
	30.0%	15/50 Lightning arresters or other Surge Protective Devices	
	8.0%	4/50 Harmonic Filters	
	10.0%	5/50 Low Voltage (600 V or less) Static Transfer Switches	
	10.0%	5/50 High Voltage Static Transfer Switches	
	28.0%	14/50 Others (please specify)	
	8.0%	4/50 Don't know	

"Other methods" were primarily DR technologies and switches



Distributed Generation

Percent Who Use DG

Percent	Count	Answers
84.0%	42/50	Yes
16.0%	8/50	No
0.0%	0/50	Don't know
100.0%	50/50	Summary

Systems Protected

Percent Count Answers				
	32.0%	16/50 Lighting systems		
	32.0%	16/50 Process systems		
	54.0%	27/50 Emergency		
	24.0%	12/50 All systems		
	12.0%	6/50 Other		
	0.0%	0/50 Don't know		

Fuel Source

Percent Count Answers			
	78.6%	33/42	Diesel
	7.1%	3/42	Natural gas
	11.9%	5/42	Mix of diesel and natural gas
	2.4%	1/42	Don't know
	100.0%	42/42	Summary



Uninterruptible Power Supply (UPS)

Percent Who Use UPS

Percent	Count	Answers
94.0%	47/50	Yes
4.0%	2/50	No
2.0%	1/50	Don't know
100.0%	50/50	Summary

Type of UPS

Percent Count Answers			
	84.0%	42/50 Battery-based uninterruptible power supply (UPS)	
	6.0%	3/50 Rotary motor-generator set (e.g. Piller or Hitec)	
	6.0%	3/50 Flywheel (e.g. Active Power, CatUPS, Sure	
	2.0%	1/50 Other	



What Percentage of Your Loads are Completely Protected from Utility Power Interruptions?

Percent	Count	Answers
8.3%	4/48	None
47.9%	23/48	10% or less
18.8%	9/48	11 to 25%
10.4%	5/48	26 to 50%
2.1%	1/48	51 to 75%
0.0%	0/48	76% to 99%
6.3%	3/48	100%
6.3%	3/48	Don't know
100.0%	48/48	Summary





Discussion

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